

CLASSIFICATION (When Filled In)

CONTRACT PERFORMANCE REPORT								FORM APPROVED	
FORMAT 5 - EXPLANATIONS AND PROBLEM ANALYSES								OMB No. 0704-0188	
1. CONTRACTOR		2. CONTRACT			3. PROGRAM			4. REPORT PERIOD	
a. NAME Fermi National Accelerator Lab		a. NAME			a. NAME NOvA Project			a. FROM (YYYYMMDD) 2009/02/01	
b. LOCATION (Address and City) Batavia, Illinois		b. NUMBER			b. PHASE			b. TO (YYYYMMDD) 2009/02/28	
		c. TYPE	d. SHARE RATIO		c. EVMS ACCEPTANCE (YYYYMMDD) NO X YES				
1.8 Detector Assembly R&D									
	BCWS	BCWP	ACWP	SV in \$	SV in %	CV in \$	CV %	SPI	CPI
Current:	260,125	13,117	36,482	-247,007	-95%	-23,365	-179%	0.05	0.36
Cumulative	1,270,768	878,966	1,733,144	-391,802	-31%	-854,178	-97%	0.69	0.51
	BAC	EAC	VAC in \$	VAC in %	CPI to BAC	CPI to EAC			
At Complete	2,850,906	3,707,687	-856,781	-30%	1.76	1.00			
Thresholds Exceeded: Current Period Schedule, Current Period Cost, Cumulative Schedule, Cumulative Cost									
Explanation of Variance/Description of Problem:									
<p>Cumulative Cost and Schedule Variance</p> <p>The cumulative cost variance is largely due to the fact that several technical issues with the detector structure and its assembly remained unresolved, or the level of effort needed to complete the design was underestimated. The largest cost to this task is labor, both within FNAL and purchased from ANL. Through February 2009, \$821K has been purchased from ANL (P.O. 563811).</p> <p>W.B.S. 1.8.2 - Structural Design Validation, \$283K – 64% complete</p> <p>Labor estimates for the structure analysis were too low, contributing to an overrun in cost and schedule here. The design of the Far Detector was developed as the understanding of internal stresses improved, so the overall time and cost overran the schedule.</p> <p>WBS 1.8.8 - Far Detector Prototype, \$791K - 19% complete</p> <p>Technical problems with the module lifting fixture and the prototype adhesive dispenser have slowed work on these items, so they remain incomplete. Lifting fixture work has required more effort than anticipated to obtain a reliable vacuum connection between the fixture and the module. The adhesive dispenser work was delayed while several safety questions, which had not been anticipated, were resolved. The adhesive pump that was obtained for the dispenser proved unsuitable, due to an unforeseen problem with clogging in the pumping mechanism. All these issues have delayed completion of the prototype program. An order for a replacement pump was placed in December and all safety issues with the dispenser mechanism have been addressed. A new vacuum cup system was designed for the lifting fixture, and early tests indicated that the reliability needed for this system may be achieved soon.</p> <p>Current Period Cost and Schedule Variance</p> <p>The current period variance is due to the same issues discussed above. Little progress could be claimed for the assembly tooling. Additional current schedule variance is due to the fact that several items relating to the IPND installation were scheduled for February, and have not yet started. These await a final decision on the IPND enclosure, and time for the FESS engineering group to complete the detailed design of this enclosure.</p>									
Impact:									
Readiness for the FSAP construction has been delayed, but the schedule for the construction studies is still achievable. No major milestones are affected.									
Corrective Action:									
A new adhesive pump was identified and ordered. This new device appears to have the ability to deliver the quantity of adhesive we require. Delivery is anticipated in March, 2009. Several variations on the lifting fixture suction cups have been studied, and more modifications to the lifting fixture are planned to make these connections more reliable. Tests made in Feb. confirm that the current version will meet the specifications needed for the assembly process. Additional work has been applied to this to improve the efficiency of its use. The IPND enclosure work variance will clear after the final decision is made on the enclosure, and the contracts can be written.									
Monthly Summary (to include technical causes of VARs, Impacts) and Corrective Action(s):									
Problems with the vacuum lifting fixture and safety issues surrounding the adhesive dispenser contributed to delays in the project. A new adhesive dispenser was identified and ordered that should meet or needs. Work continues on improving the reliability of the lifting fixture. Recent developments indicate that the vacuum reliability problem has been resolved. A number of activities that were scheduled in February, due to the funding interruption, have									
Prepared by: Lukens				Date: 23-Mar-09		Approved by:		Date:	